

THE ARCHITECT'S NEWSPAPER

08_12.15.2010

MIDWEST ARCHITECTURE AND DESIGN WWW.ARCHPAPER.COM

\$3.95

Rendering of a reconstructed Halsted Street Bridge.



COURTESY CDOT

The Chicago Department of Transportation (CDOT) is undertaking a yearlong project to reconstruct the Halsted Street Bridge over the Chicago River's North Branch Canal. Long plagued by traffic congestion

and dangerous pedestrian conditions, the two-lane crossing will be rebuilt to accommodate two lanes in each direction and dedicated bicycle lanes and sidewalks.

Built in 1909, the **continued on page 4**

BILLINGS DRIFT DOWNWARD
AFTER SHARP SEPTEMBER GAINS

Rough Ride

Following a breakout September in which the American Institute of Architects' index of billings at design firms surged into positive territory, the numbers slipped back below

the all-important 50 mark in October, confirming widespread evidence of a stop-start recovery.

The previous month's increase had brought the AIA's Architecture Billings Index to 50.4, surpassing 50 for the first time since January 2008, but those gains were all but wiped out in October as the index dropped nearly two points to 48.7. Meanwhile, inquiries dipped slightly **continued on page 2**

ZAHNER FABRICATES A NEW VILLAGE IN KENYA



COURTESY PHILIPPE BARRIÈRE COLLECTIVE

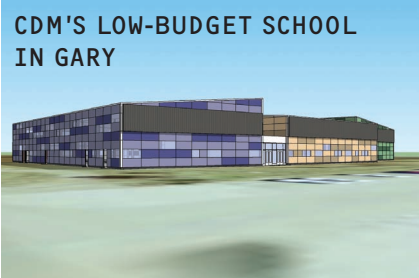
SHIPPING OUT TO AFRICA

In the burgeoning village of Maai Mahiu, Kenya, there is no method to the madness of development. An architect, an engineer, and a nonprofit

organization hope to change that. At the November First Friday's event at the Missouri Crossroads Arts District in Kansas City, nonprofit

Comfort the Children (CTC)—which promotes community development through education, environment, economic, and **continued on page 6**

CDM'S LOW-BUDGET SCHOOL
IN GARY



COURTESY CDM

Prefab Lab for Teaching

When the city of Gary, Indiana decided that they wanted to develop the property where the Charter School of the Dunes will sit on Lake Michigan, the challenging site seemed in conflict with the goals of the school. The site, though situated on the lake, rests between a freight rail line, a parking lot, and a **continued on page 5**

CONTENTS

07
RIGHT ON,
MEMPHIS

08
FEATURE:
PLUGGED-IN
URBANISM

10
PRODUCT:
BEST OF
SHOWING

12
BLAIR BOOK
PROJECT

03 EAVESDROP

11 DIARY

13 MARKETPLACE

Recycled carpet fibers fighting erosion.



COURTESY GEOHAY

A SECOND LIFE FOR RUGS

CARPET BACKERS

Carpet-industry members are ramping up efforts to improve material recovery programs across the U.S., as a decade-old national agreement signed by stakeholders, federal, state, local government agencies, and nonprofit organizations is about to expire.

Launched in 2002 as an industry-government effort to reduce carpet waste, the Memorandum of Understanding for Carpet Stewardship (MOU) will be renegotiated in time to reach an updated agreement by 2012.

"We've learned so much about carpet recycling in the last ten **continued on page 3**



CLASSICISM RISES IN INDY SUBURB.
SEE PAGE 4

DOUGLAS ADAMS

PRSRST STD
US POSTAGE
PAID
ITHACA, NY
PERMIT
NO. 188

The Architect's Newspaper
21 Murray St., 5th Floor
New York, NY 10007

PUBLISHER

Diana Darling

EDITOR-IN-CHIEF

William Menking

EXECUTIVE EDITOR

Julie V. Iovine

MIDWEST EDITOR

Alan G. Brake

MANAGING EDITOR

Jeff Byles

ASSOCIATE ART DIRECTOR

Dustin Koda

SPECIAL PROJECTS

Jennifer K. Gorsche

ASSISTANT EDITOR

Tom Stoelker

ASSISTANT WEB EDITOR

Branden Klayko

ASSISTANT MARKETING MANAGER

Lynne Rowan

CIRCULATION ASSISTANT

Linh Thoi

MIDWEST ADVERTISING

Rob Brockley

EDITORIAL INTERNS

Alyssa Nordhauser

Robert E. Thomas

CONTRIBUTORS

PHILIP BERGER / TRIPP CHAMBERLAIN /
CINDY COLEMAN / GUNNAR HAND / RYAN LAFOLLETTE
/ JAYNE MERKEL / MIRIAM MOYNIHAN / BRIAN
NEWMAN / AARON M. RENN

EDITORIAL ADVISORY BOARD

AARON BETSKY / SARAH DUNN / ZURICH ESPOSITO /
MARTIN FELSEN / SARAH HERDA / REED KROLOFF /
EDWARD LIFSON / ROBERT MCANULTY / BEN
NICHOLSON / DONNA ROBERTSON / RAYMUND RYAN /
ZOE RYAN / ELIZABETH SMITH / JULIE SNOW /
MARTHA THORNE / ANDREW ZAGO / JOHN ZUKOWSKY

GENERAL INFORMATION: INFO@ARCHPAPER.COM
EDITORIAL: EDITOR@ARCHPAPER.COM
ADVERTISING: DDARLING@ARCHPAPER.COM
SUBSCRIPTION: SUBSCRIBE@ARCHPAPER.COM
REPRINTS: REPRINTS@PARSINTL.COM

VOLUME 02, ISSUE 08 DECEMBER 15, 2010. THE ARCHITECT'S NEWSPAPER
(ISSN 1552-9081) IS PUBLISHED 10 TIMES A YEAR (MONTHLY EXCEPT IN
AUGUST) BY THE ARCHITECT'S NEWSPAPER, LLC, 21 MURRAY ST., 5TH FL.,
NEW YORK, NY 10007. PRESORT-STANDARD POSTAGE PAID IN NEW YORK, NY.
POSTMASTER, SEND ADDRESS CHANGE TO: 21 MURRAY ST., 5TH FL.,
NEW YORK, NY 10007. FOR SUBSCRIBER SERVICE: CALL 212-966-0630.
FAX 212-966-0633. \$3.95 A COPY, \$39.00 ONE YEAR, INTERNATIONAL
\$160.00 ONE YEAR, INSTITUTIONAL \$149.00 ONE YEAR.
ENTIRE CONTENTS COPYRIGHT 2010 BY THE ARCHITECT'S NEWSPAPER, LLC.
ALL RIGHTS RESERVED.

PLEASE NOTIFY US IF YOU ARE RECEIVING DUPLICATE COPIES. THE VIEWS
OF OUR REVIEWERS AND COLUMNISTS DO NOT NECESSARILY REFLECT
THOSE OF THE STAFF OR ADVISORS OF THE ARCHITECT'S NEWSPAPER.

FOR REPRINTS, E-PRINTS AND RELATED ITEMS CONTACT
PARS INTERNATIONAL, TEL 212-221-9595; FAX 212-221-9191;
WWW.MAGREPRINTS.COM/QUICKQUOTE.ASP.

BOUNCE BACK

After decades of population decline and racial strife, how did Chicago rebound and avoid the “Detroit Scenario,” the hemorrhaging of people, resources, and jobs that has struck so many Midwestern cities? That is the question DePaul political scientist Larry Bennett takes up in his fascinating new book, *The Third City* (University of Chicago Press). Bennett chronicles Chicago’s rise, or perhaps evolution is a better word, from a declining industrial powerhouse into the second tier of global cities—ranking among cities like Amsterdam, Milan, and Sydney, and just below New York, London, and Tokyo—which, according to the Chicago Council on Global Affairs, are “the engines of growth for their countries and the gateways to the resources of their regions.” Bennett sees the transformation as ongoing but given the distressingly slow pace of economic recovery (and at a particularly grueling crawl for design professions), Chicago seems to be at a crossroads. Should we assume that the city’s resurgence will continue, that the Great Recession is just a brief detour on the road to progress? Or will we settle into a Japanese-style “Lost Decade,” or worse, will the Detroit Scenario take hold here?

Building sites and concrete shells stand as relics of the economic boom. The South and West sides are sorely in need of economic development. Sites like the old Michael Reese Hospital grounds stand cleared and idle, waiting for compelling plans.

Bennett argues that such moments of citywide introspection can—and must—be productive. He claims that Chicago is America’s most “self-conscious city,” which has helped make it a hotbed of sociological and urban insight. It’s also been a site of continuous architectural and urbanistic innovation. From the World’s Columbian Exposition to the recent wholesale dismantling of the Chicago Housing Authority’s towers in the park, Chicago wills itself into new forms, new neighborhoods, and new ideas following periods of crisis.

My sense is that the odd feeling of suspension that many of us feel, and the accompanying navel-gazing, won’t last long. With the Chicago mayoral election slated for February 22, the New Year will be a time to reengage, ask tough questions, and put forth bold new ideas. We at *The Architect’s Newspaper* look forward being a venue for some of those ideas as we celebrate our second year in the Midwest. In the meantime, I suggest *The Third City* would make an excellent gift for all the urbanists in your life. It has definitely gotten me thinking.

ALAN G. BRAKE

ROUGH RIDE continued from front page from 62.3 in September—their highest point since mid-2007—to 61.7, offering continued signs of client life despite the index’s downward drift. (Any score above 50 indicates an increase in billings or inquiries, and below 50 a decrease.)

The October numbers were not unexpected by analysts who have tracked the industry’s arduous climb back from its nadir in January 2009, when the billings index hit a record low of 33.3. “This is disappointing news, but not altogether that surprising,” AIA Chief Economist Kermit Baker said in a November 17 release. “We were anticipating a slow recovery period, and it is likely that there will be some fits and starts before conditions show consistent improvement. Right now, reluctance from lending institutions to provide credit for construction projects and a sluggish economy are the main impediments to a revival of the design and construction industry.”

Architectural service providers are also in a sustained slump that is not expected to level out until commercial construction projects pick up, according to Sageworks, a financial information company in Raleigh, North Carolina. Sageworks reported in November that sales growth rebounded in 2010 for legal services by 8.8 percent, while in the same period for architectural, engineering and related services, it fell by a dismal 17.7 percent.

However, billings in the Midwest is showing some resilience, rising nearly a point to 51.8 and logging its second consecutive month of positive growth. The Northeast remained relatively strong, even as it slipped two points to 54.5, marking a third straight month above 50. The South continued its climb out of the trough, rising modestly to 48.6. Only the long-suffering West declined in October, slipping two-tenths to 44.3.

Among the sectors, the survey also pointed to gradual improvement: Commercial and industrial work continued a streak of six straight months above 50, hitting 54.5 in October. Institutional work increased to 50.8 and multifamily residential was up to 49.1, while mixed practice ended the month down a point to 43.2.

The broad economic picture indicates that good times are still some way off, with the housing sector offering a particularly gloomy outlook. In October, private housing starts plunged nearly 12 percent over the previous month, according to the Commerce Department, hitting their lowest level in 18 months and signaling a tumble back into the trough for multifamily home construction. Meanwhile, the Federal Reserve has cited both “continued growth” and “widespread signs of a deceleration” in economic activity—mixed messages that point to more jittery months ahead. **JEFF BYLES**

LETTERS

LANDSCAPE ARCHITECTS
GET NO RESPECT

I wanted to tell you that I am a big fan of *The Architect’s Newspaper* Midwest edition. Chicago has been starved for some good design reporting and this is filling the niche beautifully. I especially appreciate the number and depth of stories dedicated to landscape architecture projects.

I was surprised, though, that the feature on architects discussing Daley’s impact on Chicago’s built environment (“Mayor Daley’s Legacy,” *AN*_MW_06_10.13.2010)

didn’t include the voice of a landscape architect, especially when the photographs of projects included were all landscape-focused, and several of the architects interviewed have not completed large public realm work in the city.

But then again, maybe you’re just waiting for the next issue.

Keep up the good work!

ALISON STRICKLER
MARKETING DIRECTOR
HOERR SCHAUDT LANDSCAPE ARCHITECTS

CORRECTION

In our Studio Visit column on Kujawa Architects (*AN*_MW_06_10.13.2010) we stated that the principal attended the University of Montana. He attended Montana State University in Bozeman, home to the state’s only architecture school. We regret the error.

FOLLOW US AT:

WWW.ARCHPAPER.COM
TWITTER.COM/ARCHPAPER
FACEBOOK.COM/ARCHPAPER

DEAR JEANNE, STOP STALKING ME

Greenbuild was in town and, while my editor and publisher were attending the sessions at McCormick Place, Eavesdrop just went to the parties. The first was at the Chicago office of Arup. We exit the taxi and expect to enter a showy feat of impressive engineering, but—no—it's just a plain old office in an old building on Wacker. We check in, enter to win an iPad (we didn't), hang our coat up, and bump into **Jeanne Gang** and **Mark Schendel**. If you follow this column, you would know that she's everywhere, at every party, all of the time, or so it seems. The only problem is that she really is delightful, and Eavesdrop is starting to sound like **Blair Kamin** in the early part of 2010: Jeanne this, Jeanne that, look at Jeanne in a big straw hat.

AIN'T NO PARTY LIKE AN AN PARTY

The Architect's Newspaper co-hosted a party with Buro Happold, Graphisoft, American Hydrotech, Dow Building Solutions, and Adaptive Building Solutions the following night at the Modern Wing of the Art Institute. Party mix and sherbet punch there was not. There were open bars, two buffet stations, and passed hors d'oeuvres! And hundreds of well-dressed party-goers, proving that engineers and architects aren't all cardigans and pleated black khakis. Among the ranks were **Casimir Kujawa** of Kujawa Architects, **Zurich Esposito** of AIA Chicago, and Buro Happold principal **Craig Schwitter**. But the juiciest moment came when a design-bird landed on our shoulder and whispered that a certain well-respected local power-house that we'll call Joan of Art because of the hairdo sported in a recent magazine profile will be leaving her post. You heard it here first!

DON'T CROSS THE KIN OF A CONQUISTADOR

Bad blood between two respected Boston architects, **Monica Ponce De Leon** and **Nader Tehrani** of the firm Office dA, has forced them into arbitration. According to *The Boston Globe*, Nader alleges he's been locked out of the office after Monica changed the locks during a recent power grab. She was given a 51 percent ownership stake so that their practice could have an edge as a minority-owned, female-driven firm. Is Monica (by day the Dean of Architecture and Urban Planning at Michigan) kin to Juan Ponce De Leon, the Spanish explorer who brought us Puerto Rico, the great state of Florida, and the Fountain of Youth? If so, it might explain the turf-marking.

SEND MISTLETOE, CHEERIOS, AND PANTYHOSE TO MIDWESTEAVESDROP@ARCHPAPER.COM.

WWW.ARCHPAPER.COM

CARPER BACKERS continued from front page years," said Jeremy Stroop, operations manager for the Carpet America Recovery Effort (CARE), the nonprofit organization launched to help carry out the MOU's goals. The organization claims to have diverted more than 1 billion pounds of post-consumer carpet from landfills since its inception.

One challenge facing the industry is the disparity of carpet recycling between the country's regions. A recent seminar offered by Seattle Public Utilities and CARE underscored the gap—more than 160 million pounds are recycled each year in the Southeast, where much of the industry is based, in contrast to the 20 million pounds recycled in the Pacific Northwest or the 80 million recycled in the Pacific Southwest.

New legislation may close the gap. In October, California became the first state to mandate carpet recycling when it signed into law the AB 2398 Carpet Stewardship Bill, incentivizing reuse by rewarding entrepreneurs who create commercial goods from post-consumer carpet. The bill will generate revenue through an assessment of 5 cents per square yard of carpet sold in California, and requires manufacturers to develop a stewardship plan with the state.

Encouraging product innovations that use recycled carpet will give the industry its greatest boost, allowing recovery programs to be not only environmentally sound but also economically sustainable. "The biggest challenge that we have is market outlets. Unless there are products for the material to go into, there's no point in collecting it," said

Stroop. "It's a double challenge: we have to make sure it's economically viable, and also that it works well. The technology has to catch up with research and development."

In states like South Carolina, where carpet recycling is more popular, companies are already finding success with recycled carpet products. Leigh Fibers, an established supplier of reprocessed materials, recently announced a new venture dedicated to diverting carpet from landfills and turning it into pellets used in products like injection-molded plastics and reinforced concrete. GeoHay, another South Carolina company, became a key player in the Deepwater Horizon cleanup effort when its recycled carpet bales were used to absorb spilled oil, and several states have already specified the use of GeoHay as an erosion control device. Company representative Kellyn Hargett said GeoHay is thinking of establishing a manufacturing plant in Texas, so that more consumers can take advantage of LEED points for regionally produced materials.

Though new products using recycled carpet are cropping up each year, the carpet industry itself is still the largest user of post-consumer recycled material. Stroop said that convincing architects and designers to specify carpet recycling in a project's initial bidding phase would go a long way toward making sure it gets reused. "If they put it in their initial bid, it makes it a lot easier for the collectors to make a reclamation happen at the end of the carpet's lifetime."

JENNIFER K. GORSCHÉ



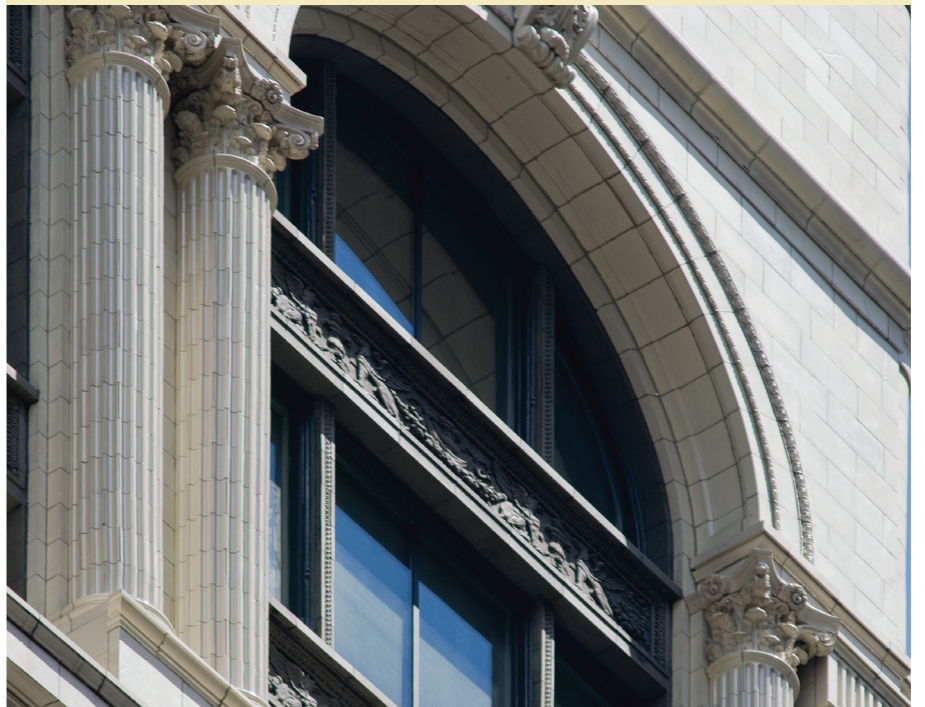
> **JW MARRIOTT CHICAGO**
151 West Adams Street
Chicago, IL
Tel: 312-660-8200
Designers: DiLeonardo,
Lucien Lagrange Architects

COURTESY JW MARRIOTT CHICAGO

Another Daniel Burnham building has been Lagrange-d, that is, adapted into a luxury hotel by Lucien Lagrange Architects. First it was the green terra cotta-clad Hard Rock Hotel, and now the new JW Marriott in the former Continental and Commercial National Bank building. The entrance to the hotel has been sheathed in a three-story glass wall that gives passersby views into the brightly lit, marble-clad lobby. It provides a clue to the interior: little of Burnham and the bank remains, replaced with modern luxury and, well, a Marriott.

A handsome Marriott it is (and with a \$396 million price tag, one would hope so). The lobby explodes with imported Italian marble and five space-filling, hand-blown chandeliers. The requisite intimate lobby bar and front desk areas are flanked by two sweeping staircases that lead to the hotel restaurant and conference center. They scream: "Take your wedding photos on me!" At the center of the building is the barrel-vaulted ballroom with atrium above. Unfortunately, the glass ceiling has been replaced with acoustic tiles, but the space is still dramatic and filled with more hand-blown glass chandeliers. Hand-craftsmanship can be found within the rooms as well. The wooden furniture came from the Amish in Ohio. **RYAN LAFOLLETTE**

Recreating The Past - Shaping The Future

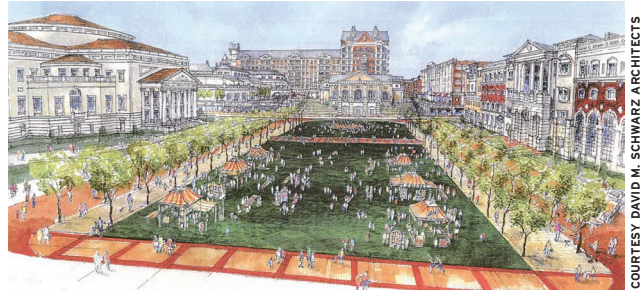


**Boston Valley
Terra Cotta**

1.888.214.3655 www.BostonValley.com

1 North State Street

INDIANA TOWN BETS BIG ON CLASSICIST CONCERT HALL



COURTESY DAVID M. SCHWARZ ARCHITECTS



RENAISSANSURBIA

Since the waning of the City Beautiful movement in the 1900s, the construction of large, classical civic buildings has become a rarity. Postmodernism may have briefly rekindled interest in the classical language but it is unusual—if not somewhat astonishing—to see a full-fledged classical building as the centerpiece of a new civic square. But such is the Palladium, the Center for the Performing Arts in Carmel, Indiana, modeled on Palladio's Villa Rotunda with detailing picked up from the Viennese Secessionists.

The 154,000 square foot Palladium will contain a grand 1,600-seat concert hall, and it is intended to be active most days of the year. For architect David M. Schwarz, the project's prominence and its site suggested the opportunity to do something really grand. "It needed to be an object building, something with four sides," he said. So

Schwarz turned to one of the world's most recognizable buildings for inspiration. "I never thought I'd get a chance to take a shot at reinterpreting the Villa Rotunda. For me, it's a dream come true."

Washington, D.C.-based David M. Schwarz Architects has a diverse portfolio of typologies and styles, but they have designed several large concert halls in various historical styles, including the Schermerhorn Symphony Center in Nashville, Tennessee and Bass Performance Hall in Fort Worth, Texas. Still, the Carmel building stands out. "It's among the most unusual projects I've ever worked on," he said. "The goal was to create a cultural focus for a suburban community, a community that has much more sophisticated views than most suburban areas." Historically, he added, most concert halls were located in dense urban centers, so the chance to do a building in the

round is especially unusual.

With an exterior of Indiana limestone, the building anchors a newly created civic square. Two additional smaller theaters sit across from the Palladium. Residential buildings with ground floor retail and restaurants will line the perimeter of the square. "People will be able to walk to the center for a show or even bike up during the day for a matinee," said Steven Libman, president of the center. Combining classical panache with contemporary savvy, the center also connects to the 17 mile Monon bike trail, linking Carmel directly to Indianapolis.

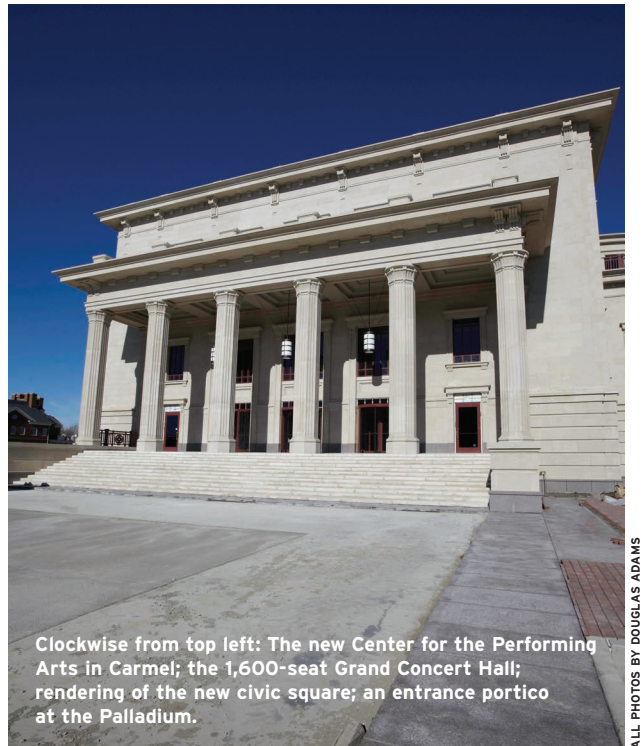
While other cities may opt to invest in avant-garde designs by renowned architects to make a civic statement, Schwarz and Libman agree that this historicist design resonates in Carmel. "Every community is different. This is a very traditional community," Schwarz said. He also argues that classical

buildings are often less expensive to build than cutting edge designs. "It's often a matter of weighing the quality you can get for the money you can spend," he said.

"When people see this building, built from Indiana limestone, it's just a tremendous expression of civic pride," Libman said. The Palladium, which will open to the public on January 22, and the larger square, which is under construction, presents a radical makeover for a downtown previously characterized more by parking lots than grand edifices.

There was less money to spend on the interior, so Schwarz used paint to decorate the hand-plastered walls with 18th-century Robert Adams-inflected motifs. "We used color to create a highly detailed and articulated space," he said.

Libman and Schwarz credit Carmel's mayor James Brainard with spearheading



ALL PHOTOS BY DOUGLAS ADAMS

Clockwise from top left: The new Center for the Performing Arts in Carmel; the 1,600-seat Grand Concert Hall; rendering of the new civic square; an entrance portico at the Palladium.

the entire project, as well as for driving its neo-traditional planning. "There are many major cities that have put the arts at the heart of their civic life, but this really sets Carmel apart as a smaller city," Libman said.

Modernists will likely

be less than impressed, but perhaps that's beside the point. "The men who built this building, the construction workers, have been literally moved to tears during some of the rehearsals," Libman said. "People just marvel at it." **AGB**

RIVER TALK continued from front page

existing movable bridge hasn't been raised in more than 25 years because large boats no longer navigate the canal. "The bridge is the earlier type of bascule bridge," said Soliman Khudeira, project director for CDOT's Division of Engineering, referring to its pivoting design. "It is what we classify as 'functionally obsolete' because it carries only one lane in each direction, and additional lanes in each direction are justified because of the traffic."

The bridge has been closed since last month, when construction began on the new span, a simply supported tied-arch design that will widen the bridge's deck from 60 to 80 feet, replacing the movable steel grating and truss with a new structural slab and built-up steel box-arch ribs, rib bracings, and

structural strands. New reinforcement concrete abutments on steel piles will be built in the canal to support the main span.

"The advantage of a tied-arch bridge is that it allows the girders below the deck to be shallower," said Khudeira. "In addition, any suspension or cable-stayed bridges add substantially to the aesthetic of the area."

Designed by Chicago-based architecture firm Muller+Muller and infrastructure and engineering firm H.W. Lochner, the new crossing will dramatically improve conditions for bicyclists, who in the past have used sidewalks or shared driving space with cars. Painted bike lanes will connect with existing lanes to the north and south of the bridge, and sidewalks will be separated by a railing. The design looks ahead to the time when

Chicago's Riverwalk will continue to this portion of the canal, with two 34-foot-wide pedestrian tunnels on either side of the bridge. Though these will be closed upon completion, the city expects they will become part of a newly landscaped area in the coming years.

While similar projects have diverted traffic over a temporary structure parallel to the existing span, Halsted Bridge engineers were limited by Con Ed towers on one side and a FedEx center on the other. The construction will close Halsted from Division to Hooker Street and cars and trucks will be detoured—commercial vehicles to the west and all other traffic to the east—for the project's duration, a plan that is already causing jams.

Nevertheless, the \$27 million project points

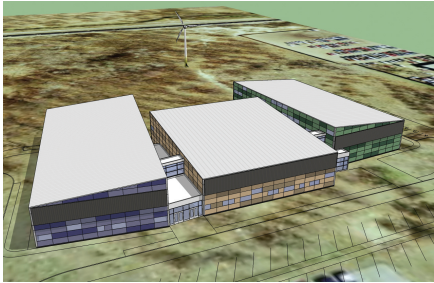
to progress on the Chicago riverfront. Khudeira's office is already working on two future Division Street bridges that will complement the Halsted Street Bridge design, not to mention its function. "We think the area will improve dramatically, aesthetically," he said.

JKG

The future pedestrian underpass.



COURTESY CDOT



COURTESY CDM

Left: Charter School of the Dunes.

captures views of the surrounding landscape.

The building's three volumes turn their back on the unsightly vistas via a horseshoe layout that opens up on the wetlands and the lake beyond. A simple shed roof pitches upward, leaving a generous wall on the courtyard side. Reinforcing the wetland and lake palette, Davis chose green, tan, brown, and blue from standard panel color choices.

"In some cases, it's pattern-making, and in some cases, it's strategic," said Davis.

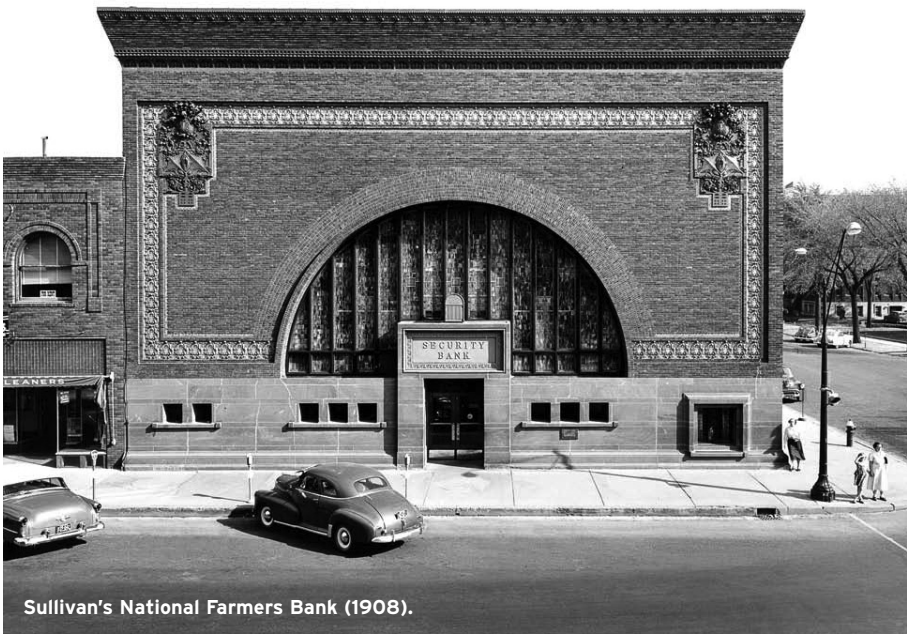
He noted that the windows in classrooms for the smaller students are placed at their eye level. Dark charcoal bands at the top act as solar collectors that preheat the makeup air before it reaches the furnace. A garage door in the gym/assembly room opens up to the grasslands, and a portable stage can move out into the dunes. Davis said he takes the trinity of "reduce, reuse, recycle" seriously. All of the panels are demountable with bolts, rather than welding. The intent is for the school itself to act as a teaching tool and lab for conservation.

"The kids in Gary face a lot challenges," he said. "I think this school helps them see things beyond their immediate community. There's something of a display before them. We're turning the school and the environment into a much more hands-on experience than they're used to, rather than feeling that this world is foisted upon them."

TOM STOELKER

PREFAB LAB FOR TEACHING continued from front page busy highway: not exactly a conducive environment for a school with a mission to teach students environmental consciousness. Further complicating matters, the cash-strapped city had a very tight budget of only \$8 million for the project.

The Chicago office of the architecture and engineering firm CDM, led by design principal Eric Davis, took an innovative, no-frills approach to address both the site and budgetary constraints. The sandy site cannot take the weight of masonry. In response, Davis' design uses lightweight reengineered building systems, particularly insulated metal panels clipped onto a metal frame. Normally, these panels run vertically and the frames run horizontally. Davis, who has been designing schools since the 1980s, knew that horizontal girts make an enticing ladder for young climbers. By flipping the composition onto its side and running the panels horizontally, the ladder disappears, and the direction of the window frame

**Sullivan's National Farmers Bank (1908).**

RICHARD NICKEL

NICKEL'S NEW HOME

The archived works of noted American photographer and preservationist Richard Nickel will soon have a new home at the Ryerson and Burnham Libraries at the Art Institute of Chicago, thanks to a donation from the nonprofit Richard Nickel Committee. Nickel is probably best known for documenting the architecture of Louis Sullivan and Dankmar Adler. A supremely dedicated preservationist, he died tragically in 1972 while attempting to salvage architectural elements from Sullivan's doomed Stock Exchange building.

According to Ward Miller, director of the Richard Nickel Committee, the first part of the collection, which mainly focuses on Adler and Sullivan, has already been moved

to the Libraries. Materials pertaining to the work of other noted Chicago architects, including Frank Lloyd Wright, Burnham, Root, Holabird, Roche/Holabird & Root, Ludwig Mies van der Rohe, Bertrand Goldberg, C.F. Murphy, and Skidmore, Owings & Merrill, will be relocated in the coming months.

This donation of about 15,000 photographs, negatives, drawings, and documents was timed to coincide with the very long-awaited publication of *The Complete Architecture of Adler & Sullivan*, a photographic tome of over 800 images that was begun by Nickel and photography professor Aaron Siskind at the Illinois Institute of Technology in the early 1950s.

ALYSSA NORDHAUSER

Mesa



Mesa Verde Pendant
42 Watt CFL x 2
12 x 30 Inches
In Cherry, Maple, Birch,
Zebrawood or Wengé Veneer

Lampa.com 631.722.9450

Lampa

Click ● 336

ready.
set.
open!

Please stop by to see our new showroom
and raise a glass for the holidays...

Open House December 13th to 17th, 9 to 5pm

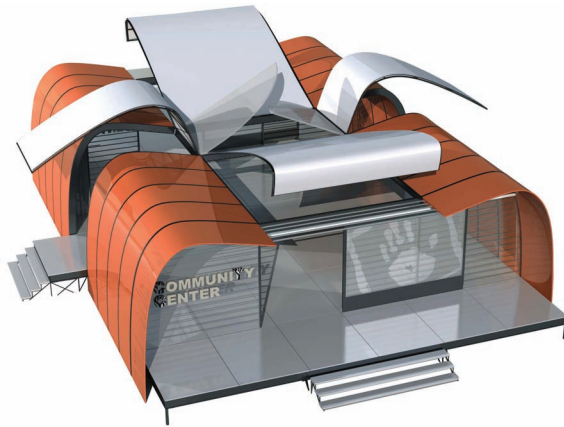
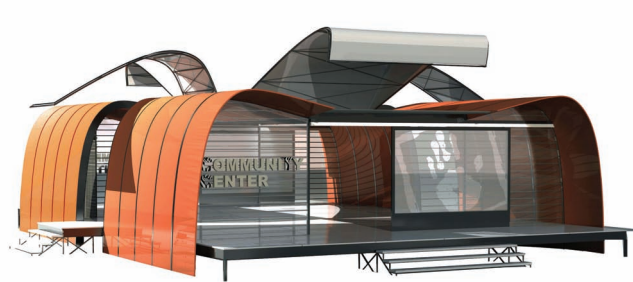
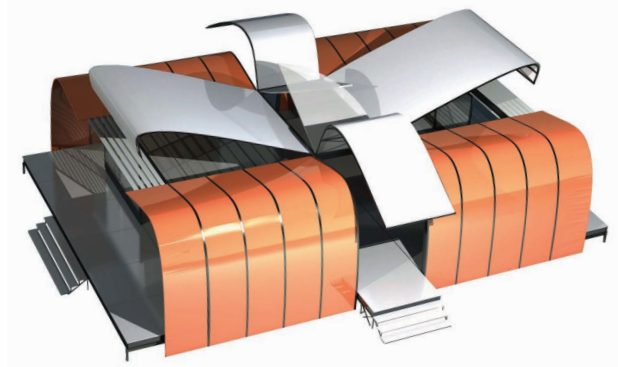
thefineline

503 N WELLS ST CHICAGO IL 60654 312.670.0300 P 312.670.0303 F FINELINETILE.COM

Click ● 347

THE ARCHITECT'S NEWSPAPER DECEMBER 15, 2010

The multifunctional prefab pod can be reconfigured and linked to other pods. Below: the 12.5-acre site in Kenya's Rift Valley.



SHIPPING OUT TO AFRICA

continued from front page health initiatives—showcased a pre-fabricated community center that it hopes will become a model for simple, high-quality vernacular architecture.

The community center was designed by architect Philippe Barriere, founder of the Philippe Barriere Collective, with help from William Zahner of A. Zahner Company, an

architectural metal and glass fabricator; the structure will remain in Kansas City for the next few months on display to raise awareness and money. In mid-2011, it will be dismantled and sent to Kenya for reassembly by local workers trained by a contingent from Zahner. Zane Wileman, executive director of CTC, said his organization "is about education and empowerment,

so we work with the local population to help them build themselves out of poverty."

A proponent of multi-transitional growth housing, Barriere said his design is slated to be the first of many such installations on the Kenyan site. As funding allows through partnerships and donations, structures will organically grow into each other over time. Said Barriere,

"Each prototype is organized to create a rhythm in which they eventually reach each other to make a coherent whole." Wileman explained that these structures would serve as a hub for future development.

Zahner and Barriere have worked together on other projects, and the design is again the product of their collaboration. They posed the

question of what is the easiest, cheapest, and simplest archetype to build, which turned out to be the arch. Each prototype (community center, medical facility, sewing school/factory, children with special needs facility, multi-purpose recreation facility, and a public library/internet cafe) introduces what Barriere called "high simplicity" to

local development.

"This first project allowed us to test construction, cost, and scalability of each structure as it grows," Zahner said. All structures are scheduled for completion in phases by 2013. Until then, the 12.5-acre site in Kenya's Rift Valley is being prepared with a water well, landscaping, and a soccer field.

GUNNAR HAND



COURTESY PHILIPPE BARRIERE COLLECTIVE

Showroom Hours & Location

314 West Superior, Chicago, IL 60654
 Mon - Fri 10am - 5pm, Sat 10am - 2pm
 Phone 312.506.2880 • Fax 312.337.6975
www.granitifiandre.com

Rendering of the new National Civil Rights Museum in Memphis. Below: the entrance lobby.



Memphis Makeover

The National Civil Rights Museum (NCRM), located at Memphis' Lorraine Motel where Martin Luther King, Jr. was assassinated in 1968, will undergo an estimated \$20 million renovation updating its facilities and exhibit spaces. Spearheaded by D.C.-based design firm Howard+Revis, the project marks the first renovation since the museum's opening nearly 20 years ago.

"When the museum opened in 1991, we were the first museum to chronicle the modern civil rights movement's history," said Tracy Lauritzen Wright, the muse-

um's director of administration and special projects. "Since it was the first exhibit to closely examine this history, there was a motivation on the part of the designers to put in a lot of information, so it is very text-heavy. It's time to update our presentation methods and tools."

Working with local firm Self + Tucker Architects, whose principal Juan Self worked on the original NCRM design for D.C. firm McKissack & McKissack, Howard+Revis will add the multimedia and artifact displays that have been lacking from the museum's exhibits, in spite of a sig-

nificant number of donations over the years. Although it was not conceived as a collecting institution, said Wright, "people felt compelled to donate and share their own experiences."

The museum is also developing its own oral history archive as a major part of the new exhibits. "It's unusual for a project to be put out and have the exhibit designers be the prime contractor, but they wanted the design to flow from what the exhibit and media needs are," said Howard+Revis principal Jeff Howard.

With nearly 220,000 visitors

last year, more than twice its initial numbers, the popular exhibits—the Rosa Parks bus and a sit-in lunch counter—may have to be rearranged to improve traffic flow. The museum's total footprint will remain around 60,000 square feet. In the theater, a new sliding screen will allow visitors to exit alongside photography of civil rights marchers after viewing an introductory film.

In 2002, the museum annexed the nearby Young and Morrow boarding house, in which King's convicted assassin James Earl Ray stayed, with a connecting underground tunnel and amphitheater. The design team will create a more cohesive campus for the two buildings, adding annex

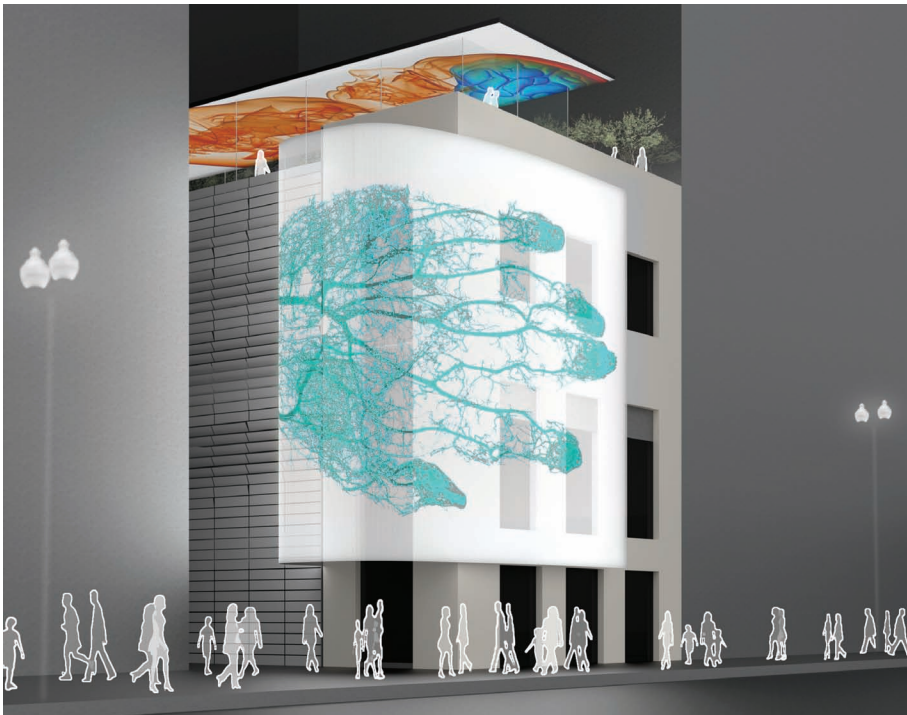
facade signage to correspond with a new entry portal and second-story glass overlook on the motel side. Because the Lorraine facade—designated a historic site by the Tennessee Historical Commission—is the museum's most significant artifact, signs and pathways directing visitors to Room 306, where King was staying at the time of his assassination, will be improved. Outdoor listening posts, sculpture, and banners will give the museum more of a street presence, whether open or closed. "The site is a pilgrimage site and people show up when the museum is closed, or at night," said Howard.

Though some new exhibits will be open in time for the NCRM's 20th anniversary next

year, construction will be staggered over four years to allow the museum to remain open during much of the renovation. The goal is to keep the Room 306 exhibit open throughout, reinforcing the historic importance of the place where King was shot. "Our president Beverly Robertson likes to say that the site has transformed from a site of tragedy into an educational triumph," Wright said. **JKG**



COURTESY HOWARD+REVIS



COURTESY AS+GG ARCHITECTURE

UNVEILED

NATIONAL MUSEUM OF HEALTH AND MEDICINE

When the National Museum of Health and Science decided to open a branch in Chicago, they envisioned a new museum paradigm, and Adrian Smith + Gordon Gill Architecture has given life to a concept modeled after the human body. "We're trying to take a critical approach

to museum experience as it currently stands," principal Gordon Gill explains. "The building itself is an organism—it's alive."

Overlaying the original 1933 structure, a curving glass facade is able to display images, helping to engage an adjacent plaza and activate an alleyway on axis with nearby Grant Park. Inside, the lobby floor generates electricity as visitors pass through, and an auditori-

um immerses guests with custom-tailored projections on the walls, ceiling, and floor. Gill says the museum offers an experiential dialogue between structure and visitor.

BRANDEN KLAYKO

Architect: Adrian Smith + Gordon Gill Architecture
Client: The Buonacorsi Foundation
Location: Chicago, Illinois
Completion: 2014

AT DEADLINE

AHOY, NORTHERLY ISLAND PARK!

Seven years after Chicago's Mayor Daley sliced the runways of the Meigs Field airport on Lake Michigan, a framework plan prepared by Studio Gang Architects and JJR has been released to guide the transformation of Northerly Island into a nature park over the next several decades. As Chicago's largest lakefront open space at 91 acres, the new park will feature ecologically diverse landscapes including forests, savannahs, prairies, wetlands, a reef, and a lagoon with a sunken ship. "Northerly Island is a very unique urban open space with an equally unique location," said Chicago Park District CEO Timothy Mitchell in a statement. "We have an incredible opportunity to lay the groundwork for future generations and eventually develop this site into a multi-seasonal park that will potentially rival Millennium Park, New York City's Central Park, and London's Hyde Park." Officials hope the juxtaposition of rugged landscapes with the skyline will create an destination where visitors can swim, kayak, or take in a concert. The plan includes an amphitheater with a green roof that doubles as an ice rink in winter.

CLEVELAND'S CONVENTIONAL HEALTH PLAN

Scheduled to start construction next month, Cleveland's \$465 million Medical Mart and Convention Center aims to attract high-tech jobs while harnessing the image of the Cleveland Clinic to remake the city as a hub of the medical equipment trade. LMN Architects and landscape designers Gustafson Guthrie Nichol designed the four-story structure on the Cleveland Mall along Lake Erie to house medically oriented showrooms plus trade show and conference space with an adjoining convention center. City leaders expect the facility to attract additional biotech and healthcare business. Last month, New York developer Vornado Realty Trust signed agreements with the city, county, and affected landowners allowing the project to proceed. The Medical Mart is funded in part through a sales tax surcharge adopted in 2007.

EXPANSIVE NUCLEUS

After a two-year delay brought on by the recession, the University of Louisville is moving forward with the first phase of a planned bio-medical research campus, dubbed the Nucleus. Located in downtown Louisville, the project is expected to generate 8,700 jobs. Arrasmith, Judd, Rapp, Chovan and SmithGroup designed the first 160,000 square foot laboratory and office structure to begin construction this spring. The \$20 million project represents the university's ongoing effort to attract life science and wellness business to the city. "This first building is a catalyst for companies that will take homegrown research from the lab to the marketplace," said U of L President James Ramsey in a statement. With financing and commitments for 60 percent of the building space secured, work can proceed. Construction is expected to be complete in 2012.

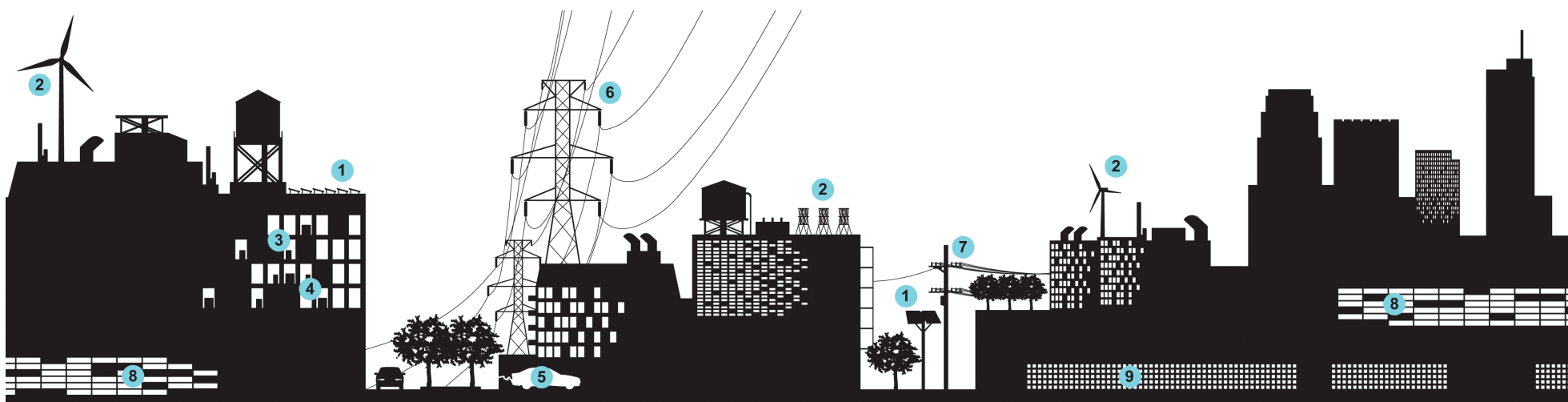
SMART GRID CITY



ALL IMAGES COURTESY ADRIAN SMITH + GORDON GILL ARCHITECTURE

**CHICAGO INVENTED THE SKYSCRAPER.
CAN IT PIONEER THE BEST URBAN
SUSTAINABLE-ENERGY STRATEGIES
AS WELL? BY ANN LOK LUI**





Above: Elements of a smart grid system. 1. Solar panels 2. Wind turbines 3. Smart appliances 4. Remote control for non-essential appliances 5. Plug-in hybrid cars 6. Locally generated power 7. Wireless communication between users and the utility company 8. Web and mobile device interfaces to monitor usage from a distance 9. Energy storage. **Facing page:** Adrian Smith + Gordon Gill Architecture analyzed carbon emissions in the Loop. The buildings coded in green emit the least carbon, yellow the second least, orange the third, and the red buildings emit the most carbon per square foot.

Chicago's historic skyline has always been a source of pride for city residents. And while few new buildings are currently going up, building owners have developed a plan to capitalize on the latest advances: Smart-grid technologies that will convert the city's iconic skyline into what backers call a "virtual green generator" by retrofitting highrise buildings and the existing electrical grid to a new hyper-connected intelligent-communications backbone. Simultaneously, researchers at local universities, among them the Illinois Institute of Technology and the University of Illinois Urbana-Champaign, have been developing their own cutting-edge smart-grid technology.

"We want to make Chicago a hub for smart-grid manufacturing and deployment," said Andrew Barbeau, the managing director of the Center for Electricity Innovation at IIT. "Energy generation, delivery, and management is a trillion-dollar marketplace, and we are really trying to make Chicago a center for that." Chicago has long been a leader in innovation for electrical utility and power industries, he added, even when the West Coast was attracting much of the software and tech jobs. "Chicago never gave up on what its strengths are, and is prepared to make a comeback," he said.

In fact, the Windy City is a likely birthplace for what could be the largest-ever smart-grid pilot. It has a captive market of building owners—interested in reducing their utility bills and attracting green-conscious tenants—cheek-to-cheek with top electrical engineering universities. Public support and cooperation from local utilities has also made for fertile ground. The Chicago Climate Action Plan, launched in 2008 by Mayor Richard Daley, plans on retrofitting 50 percent of industrial and commercial buildings by 2020.

And while cities in other countries, such as China and Dubai, are rapidly growing in population and new construction where sustainable design choices are a natural for new buildings, Chicago's population peaked in the 1960s. The city can't rely on new green construction. It has to look at existing building stock.

"The most sustainable building is one that already exists," said Barbeau. In the city where skyscrapers were born, the sheer square footage of Chicago's commercial high rises means that their reductions are proportionally bigger than in private homes.

Building Owners and Managers Association Chicago (BOMA), an organization that represents nearly 300 Chicago commercial buildings including the Aon Center, the Willis Tower, and the Hancock Center, has partnered with the Illinois Science and Technology Coalition (ISTC) and other groups interested in smart-grid technology. According to back-of-the-envelope estimates by BOMA engineering consultants, the downtown buildings could jointly reduce usage by 200 megawatts by linking into smart-grid technologies—an amount equivalent to the production of a fully functioning coal-plant.

"In a much more decentralized grid, each building can function as a power plant," said Roger Frechette, president of PositivEnergy, a consulting firm launched by Adrian Smith + Gordon Gill Architecture (AS+GG) following the development of their so-called Decarbonization Plan for the Loop. "Some days the buildings are consuming, some days they're producing." AS+GG's plan also includes a smart-grid initiative and intends to reduce net carbon emissions by 100 percent by 2020.

On a large scale, a smart grid—where the supply is distributed to many sources—would provide more reliable energy. Currently, the U.S. alone loses \$100 billion on average each year to blackouts and energy failings, according to an IBM consumer survey. If a transformer fails somewhere down the line, a smart grid could instantly pull energy from other locations with excess.

Funding the smart-grid project, however, which will cost millions in retrofitting and research, is no simple task.

In July, Chicago building owners seemed to have found a lucky break. Along with ISTC and the Citizens Utility Board, BOMA signed a memorandum of understanding with the Republic of Korea to bankroll the multimillion-dollar development-and-research initiative. Public and private Korean groups, including LG Electronics and KT Corporation, were hoping to partner with the city. The deal made business headlines and seemed to be a windfall for the smart-grid initiative.

The year before, BOMA was denied a grant from the U.S. Department of Energy for stimulus funds earmarked for smart-grid projects—even as ConEd received \$5 million for a similar project in residential Chicago neighborhoods.

Now, BOMA Executive Vice President

Michael Cornicelli says that Korea will no longer be funding the retrofitting project.

"We determined that their notion of funding the project was different than ours," Cornicelli said. "We thought they would be providing a grant. Really, what they had in mind was a provision of some capital with the expectation of some return on the capital."

The pilot project to retrofit volunteer buildings, including the Aon Center, will instead be put out for bids from public or private parties. According to Cornicelli, Korea will be encouraged to submit again. For others, the upcoming smart-grid RFP will be an opportunity to invest in Chicago's green nest egg.

Researchers at Illinois Institute of Technology and University of Illinois Urbana-Champaign, on the other hand, are still receiving funding from South Korean groups including KESRI, the Korean Electrical Engineering & Science Research Institute. In July, the university signed three memoranda of understanding with the Republic of Korea to develop smart-grid technology and workforce training programs. IIT has long been a frontrunner in smart-grid research; the campus itself runs on a smart grid called Perfect Power, which cost \$12 million to implement.

"We're looking at creating more efficient buildings," Barbeau said. "We're not talking about passive solar or double pane windows, we're looking more at advanced technologies for businesses and home owners to cut down their electricity use."

As a private resident, the smart grid could allow you to use cheaper off-peak energy to charge your car, run your washing machine, or manage your appliances that are using the most energy. Further, with a photovoltaic on your roof or a wind turbine in your backyard, you could sell extra energy back to the grid for income.

However intelligent grids seem to be, consumers and developers alike have reservations about some smart-grid technologies. Consumer blogs online have been posting medical studies—such as 2008 research by Samuel Milham, M.D., who focuses on occupational hazards—that link smart meters to radio-frequency radiation, which can pose health risks. The California-based consumer rights group Turn wants the utility PG&E to be held accountable for inaccurate smart-meters that are resulting in higher utility bills for consumers. Turn also argues that smart meters are eliminating traditional

meter-reading jobs and are compromising consumer privacy.

"There are elements of the smart grid that are ready to go today," said PositivEnergy's Frechette. "There are other elements that are not."

In Chicago, UIC researchers are working on cyber-security, which may address Turn's issues with consumer privacy. Additionally, in contrast to Turn's concerns about job losses, groups behind the Chicago initiative believe that the project will bring green jobs to the city.

The non-profit Clean Energy Trust and IIT have partnered to develop small-business cluster initiatives. They were awarded \$1.05 million in stimulus money to invest in and provide seed money for local, clean-energy businesses. In smart-grid development, there is room for many industries: from manufacturing home management systems that would allow you to monitor your electricity usage, to iPhone apps that might help you sell your extra energy back to the grid, to a "Geek Squad" trained to come to private residences to retrofit electricity monitors to the new communications backbone.

"It's all hands on deck," said Frechette. "In terms of involvement, we're going to need to look at how walls are put together, we have to look at glass, roof insulation, and the tightness of building skins—it's all important."

Smart grids will directly impact architects' design strategies: Better performing buildings will also mean more profitable ones. When the technology is ready, inhabitants—with in-situ smart meters—will instantly be able to see how well their buildings are performing. Clients, already starting to gravitate towards buildings that are LEED certified, will find that when linked to a smart grid, investing in good design will return not just in savings, but also in terms of income.

"People are already designing positive-energy buildings," said Matthew Summy, President of the Illinois Science and Technology Coalition. "What do you do with the excess energy? You could shift the load from one building to the next. Suddenly, you're a virtual power plant."

Today, visitors look at Chicago's historic skyline and see the city's architectural and economic heritage. In a few years, they may look up and see some of the world's tallest sources of renewable energy.

ANN LOK LUI IS A CHICAGO-BASED JOURNALIST.



THE ART OF PRESENTATION

SMART TECHNOLOGIES ARE TRANSFORMING THE POWER OF SHOW AND TELL.
BY JENNIFER K. GORSCHÉ

1 MESSENGER ABSTRACTA

Available in three sizes, Messenger is a conference cabinet that doubles as a writing surface. Laterally sliding doors are made with SilverPro glass board, on which whiteboard markers can be used. The cabinet's interior can be equipped with a second SilverPro writing/projection surface or an LED, LCE, or plasma screen.
www.abstracta.se

2 CERAMIC SPEAKER NENDO

Dedicated to revitalizing traditional crafts in Japan, Nendo partnered with potter Mitsuke Masagasu to design a ceramic speaker with unique graphic appeal. Its red-glaze designs are fused to a 1-millimeter-thick ceramic substrate with a precise, computer-controlled manufacturing technique normally used for LED bulbs and other heat-emitting internal components, creating a visually distinctive wall-mounted speaker compatible with a range of devices.
www.nendo.jp/en

3 VPL-FX500L SONY

Sony is expanding its line of high-brightness 3LCD business projectors with a new fixed-installation model called VPL-FX500L, which delivers 7,000 lumens of color light output with one lamp, but has a second automatic backup lamp for a total lamp life of 8,000 hours. Suitable for university lecture halls and corporate auditoriums, the white projector blends into the ceiling when mounted.
pro.sony.com

4 CP-AW250N HITACHI AMERICA

The new CP-AW250N from Hitachi America is an ultra-short throw projector that can project an 80-inch screen at a distance of 22 inches. A new free-shaped lens and mirror improves throw ratio and also makes the projector smaller, lighter, and increases the display quality of high-definition images. The device includes wired networking, allowing for data transmission and simultaneous control of several projectors at once.
www.hitachi-america.us

5 INTERACTABLE 3.0 WILKHahn

Wilkhahn has introduced the third generation of its Interactable, a 37-inch-high table with an integrated 50-inch interactive screen. When connected to a compatible computer, the surface allows for group work on project plans and engineering drawings. The tabletop is made from barrel-shaped MDF, in a variety of finishes, atop a powder-coated aluminum frame. A smaller ConsulTable is also available.
usa.wilkhahn.com

6 S2 MULTIMEDIA CABINET SIEMATIC

Viewing the kitchen as another living room, SieMatic has introduced its new tall S2 multimedia cabinet that can integrate an audiovisual system, developed with T+A, and the SieMaticGrid user interface. The handle-less cabinet can become an iPod dock, CD, DVD, TV, and radio, with internet access and other individually configurable options available, in addition to integrated storage for high-tech components.
www.siematic.com

DECEMBER

**THURSDAY 16
LECTURE**
Express Talk: European Design Since 1985
12:00 p.m.
Milwaukee Art Museum
700 North Art Museum Dr.
Milwaukee
www.mam.org

Architecture of the Air
7:00 p.m.
Walker Art Center
1750 Hennepin Ave.
Minneapolis
www.walkerart.org

**EXHIBITION OPENING
50/50:**
Audience and Experts Curate the Paper Collection
Walker Art Center
1750 Hennepin Ave.
Minneapolis
www.walkerart.org

EVENT
Winter Solstice & Christmas at Lilly House
5:30 p.m.
Lilly House & Madeline F. Elder Greenhouse
Indianapolis Museum of Art
4000 Michigan Rd.
Indianapolis
www.imamuseum.org

**FRIDAY 17
EVENT**
Robie House After Hours
6:00 p.m.
Robie House
5757 South Woodlawn Ave.
Chicago
www.gowright.org

**MAM After Dark:
Euro Bash**
5:00 p.m.
Milwaukee Art Museum
700 North Art Museum Dr.
Milwaukee
www.mam.org

LECTURE
**Chicago Cabinet:
Views from the Street**
2:00 p.m.
Art Institute of Chicago
111 South Michigan Ave.
Chicago
www.artic.edu

EXHIBITION OPENING
**David Kroll
New Paintings**
325 West Huron
Chicago
www.zollaliebermangallery.com

**SATURDAY 18
EVENT**
**Build Your Own
Gingerbread House**
10:30 a.m.
Millennium Park Room, Art Institute of Chicago
111 South Michigan Ave.
Chicago
www.artic.edu

LECTURE
Political and Social Expressions in Art
1:00 p.m.
University of Michigan Museum of Art
111 South State St.
Ann Arbor
www.umma.umich.edu

EXHIBITION OPENING
**Hidden Treasures: Illuminated Manuscripts from
Midwestern Collections**
Chazen Museum of Art
800 University Ave.
Madison
chazen.wisc.edu

**SUNDAY 19
EVENT**
**Highlights Tour:
Forgotten Pleasures**
1:30 pm
The Cleveland Museum of Art
11150 East Blvd.
Cleveland
www.clevelandart.org

December 21
OPENING
The Precession
Hyde Park Art Center
5020 South Cornell Ave.
Chicago
www.hydeparkart.org

**THURSDAY 30
LECTURE**
European Design Since 1985
12:00 p.m.
Milwaukee Art Museum
700 North Art Museum Dr.
Milwaukee
www.mam.org

**Masterpiece of the Day—
America Windows**
12:00 p.m.
Art Institute of Chicago
111 South Michigan Ave.
Chicago
www.artic.edu

FILM
Smash His Camera
7 p.m.
Indianapolis Museum of Art
4000 Michigan Rd.
Indianapolis
www.imamuseum.org

**FRIDAY 31
EVENT**
**Low-Brow/
High-Brow Bash**
Canton Museum of Art
1001 Market Ave. North
Canton, OH
www.cantonart.org

JANUARY

**WEDNESDAY 5
LECTURE**
**Art in Focus:
Picasso's Artist Connections**
1:30 pm
The Cleveland Museum of Art
11150 East Blvd.
Cleveland
www.clevelandart.org

**Wisconsin's Own:
The Chicago Connection**
12:00 p.m.
Lecture Hall Gallery
224 South Michigan Ave.
Chicago
caf.architecture.org

**THURSDAY 6
LECTURE**
**Screening of Chicago-Scope
& Conversation with Tom
Palazzolo and Kelly Shindler**
6 p.m.
Price Auditorium
Art Institute of Chicago
111 South Michigan Ave.
Chicago
www.artic.edu

EVENT
**Tour: The Arts of Oshkosh
Rahr-West Art Museum**
610 North 8th St.
Manitowoc, WI
www.manitowoc.org

**FRIDAY 7
EXHIBITION OPENING**
**Project Onward, The Nathan
and Kiyoko Lerner
Foundation, El Valor, and
Esperanza**
Judy A Saslow Gallery
300 West Superior St.
Chicago
www.jsaslowgallery.com

Lori Nix: The City
Catherine Edelman Gallery
300 West Superior St.
Chicago
www.edelmangallery.com

**Two Person Show:
Yong Jin Han & Jung Jin Lee**
Andrew Bae Gallery
300 West Superior, Chicago
www.andrewbaegallery.com

**SATURDAY 8
EXHIBITION OPENINGS**
**Talia Chetrit and
Daniel Gordon**
Tony Wight Gallery
845 West Washington Blvd.
Chicago
tonywightgallery.com

Matthew Metzger
Tony Wight Gallery
845 West Washington Blvd.
Chicago
tonywightgallery.com

**SUNDAY 9
EVENT**
**Geek's Guide to
Wright's Robie House**
10:00 a.m.
Robie House
5757 South Woodlawn Ave.
Chicago
www.gowright.org

**TUESDAY 11
EXHIBITION OPENINGS**
**The Fulcrum Lost its Feather:
A Collaborative Work
by Daniel Evans and
Shu-Mei Chan**
SoFA Gallery
University of Indiana -
Bloomington
1201 East 7th St.
Bloomington
www.indiana.edu/~sofa/

Them: Images of Separation
Kendall Gallery
Kendall College of
Art and Design
17 Fountain St. NW
Grand Rapids, MI
www.kcad.edu

EVENT
Old House Workshop
7:00 p.m.
Goodman Atwood
Community Center
149 Waubesa St.
Madison, WI
www.goodmancenter.org/

**WEDNESDAY 12
LECTURES**
**Relics at Saint Chapelle in
Paris**
6:30 p.m.
The Cleveland Museum of Art
11150 East Blvd.
Cleveland
www.clevelandart.org

**Music and Architecture:
Design, Aesthetic and Form**
12:00 p.m.
Lecture Hall Gallery
224 South Michigan Ave.
Chicago
caf.architecture.org

**THURSDAY 13
EVENT**
**Pre-performance Tour:
Gob Squad's Kitchen**
6:45 p.m.
Walker Art Center
1750 Hennepin Ave.
Minneapolis
www.walkerart.org

EXHIBITION OPENING
**When After Comes Before at
the A+D Gallery**
Anchor Graphics
600 South Michigan Ave.
Chicago
www.colum.edu/adgallery/

**SUNDAY 16
LECTURE**
**The New Weston Wing:
Transforming Japanese Art at
the Art Institute of Chicago**
2:00 p.m.
Pillsbury Auditorium
Minneapolis Institute of Arts
2400 Third Ave. South
Minneapolis
www.artsmia.org

**TUESDAY 18
LECTURE**
**Gallery Talk:
"The Lunatic Fringe" with
Barbara Brown Lee**
1:30 p.m.
Milwaukee Art Museum
700 North Art Museum Dr.
Milwaukee
www.mam.org

FILM
**Goat Island Film Screening &
Talk with Mark Jeffery,
Sarah Best, and Lucy Cash**
6:00 p.m.
Hyde Park Art Center
5020 South Cornell Ave.
Chicago
www.hydeparkart.org

**WEDNESDAY 19
LECTURES**
**Planning & Zoning:
Annexation**
6:00 p.m.
University of Missouri-St. Louis
J.C. Penney Conference Center
1 University Blvd., St. Louis
www.umsi.edu

**Chicago's Lake Shore Drive:
Urban America's Most
Beautiful Roadway**
12 p.m.
Lecture Hall Gallery
Chicago Architecture
Foundation
224 South Michigan Ave.
Chicago
caf.architecture.org

EXHIBITION OPENINGS
Style As Substance
Bond Hall Gallery
University of Notre Dame
Notre Dame, IN
www.nd.edu/

**The Truth is Not in the Mirror
Photography and a
Constructed Identity**
Haggerty Museum of Art
13th & Clybourn St.
Milwaukee
www.marquette.edu



MATALI CRASSET

HYPERLINKS: ARCHITECTURE AND DESIGN

Art Institute of Chicago
111 South Michigan Avenue, Chicago
Through January 20, 2011

For much of their respective histories, modern architecture and design were considered separate if related disciplines. Architects may have routinely branched out to furniture design, but the boundary between fields still often seems static. As we progress into the 21st century, however, the separation becomes less and less stringent. Responding to this apparent shift in paradigm, the Art Institute of Chicago has assembled more than 30 projects and proposals that “illustrate the potential that is inherent in more open-minded ways of working that encourage innovative new directions, fresh thinking, and discovery.” *Hyperlinks: Architecture and Design*, on view through January 20, 2011, pulls from an internationally diverse group of individuals and firms working in varied media. The exhibition and accompanying catalogue are structured around ten different “hyperlinks,” or disciplinary intersections such as Hyper-Digital and Hyper-Narrative, which are intended to “function like citations, providing footnotes that prompt exploration.” Among the works applicable to all ten hyperlinks is French designer Matali Crasset’s proposal *Spring City in Mexico* (2008, above).



ERWIN REDL

SIX SOLOS—ERWIN REDL
Wexner Center for the Arts
1871 North High Street, Columbus
Through February 13, 2011

Erwin Redl may have graduated from college with a degree in music composition, but his true medium is light. After studying computer art at the School of Visual Arts in New York City, the Austrian-born artist began experimenting with LED displays in both two- and three-dimensional formats, often incorporating and blanketing existing architecture. Redl’s installation at the 2002 Whitney Biennial, *Matrix VI*, sheathed a Brutalist building in a net of red and blue pinpoints. Now, he joins five other rising artists for Six Solos, a collection of independent exhibitions inside and outside Ohio University’s Wexner Center for the Arts in Columbus. Redl’s piece *FETCH* (above) is a site-specific installation that incorporates approximately 100 pink LED light sticks into the exterior walkway of the Wexner building, a deconstructivist collage by architect Peter Eisenman. Situated in the top three rows of the outdoor grid, the piece, on view at night, “draws on a range of precedents, including Eadweard Muybridge’s experiments with rapid-action photography and the work of the California Light and Space Artists.”

THE ARCHITECT'S NEWSPAPER DECEMBER 15, 2010

INSIDE STORY

*Handcrafted Modern:
At Home With Mid-Century Designers*
Leslie Williamson
Rizzoli, \$45.00



LESLIE WILLIAMSON

Every now and then, a book arrives that is not just a handsome presentation of information, but also a completely satisfying aesthetic object. This is the case with *Handcrafted Modern* by Leslie Williamson. Her photographs inside designers' (mostly) midcentury modernist homes capture something of the inhabitant and his or her pattern of living. But they reveal something more—something of the life of the designer of the space.

Williamson created the book because she couldn't find anything like it in the basement of San Francisco's William Stout Books, where she used to buy design titles. She tracked leads to all kinds of modernist designers, but time and expense limited her to only U.S. projects. Fairly early in the process, she decided that she would include houses that were either currently lived in by the designer or kept the way the designer left them when alive. A few of the houses have been well documented over the last several decades, like the Eames and Gropius residences, but whether the house already has a public life or not, Williamson's thoughtful yet informal style captures something fresh.

Even the Eames house, one of the most modern and best known of the residences in the book, acquired a handcrafted quality after Charles and Ray Eames were done filling it with their collections. I have never seen an image of their nightstand (with Ray's bobby pins visible) or a close-up of the bookshelf. Meanwhile, several names in the book were new to me, like the

unusual works of sculptor J.B. Blunk and woodworker and metal-smith John Kapel. Blunk's sensuous sculptures fit well in his rough-hewn Inverness cottage, while Kappel, a furniture designer, uses wood to tailor a precise house in Woodside. Williamson also discovered Irving Harper before *The New York Times* brought his colorful and whimsical paper sculptures to light. Danish American furniture designer Jens Risom's house appealed deeply to me, while Eva Zeisel's antique-laden public rooms were a complete surprise. Rather than shooting starch-sharp magazine images where all of the objects have been rearranged, Williamson records the rooms as she finds them, with minimal disruption.

This is not a decorator's book. It is a storyteller's book, one for people who want to look deeper into the lives of 20th-century designers and then travel vicariously with the photographer as she describes her visits. The linen cover and the layout complement the photographs, while Williamson's personal text adds another layer of insight. There are no formal portraits of the inhabitants: The portrait is found in the space.

Williamson is not afraid to share her stumbles or disappointments. As she writes in her introduction, "Perfection is supremely uninteresting to me." She regrets that she didn't get around to shooting Ise Gropius' cookbook with notations on how "Gropi" liked his duck à l'orange prepared. She tells the story of the towel with his inked name hanging in the bathroom: "He was no longer an icon of Modernism.

Left: Inside Wharton Esherick's home in Valley Forge, PA.

He was a guy worried about losing his towel."

Simply organized, each entry opens with an image across a single page or a double spread followed by the photographer's story of shooting the space, along with more photos. The graphic design is subtle: The title page for each entry looks like a keyhole—a special look inside. There are no captions, just the experience of the space.

As so much design information moves online, Williamson's contribution makes a strong argument for the value of books. The photos are not perfectly lit (she only used available light) or parallax corrected. Williamson shot with a medium-format camera and film. The result is richer than digital, and it is deeply satisfying to look at an image, read an entry, and then return to the image. Although she took over 200 photographs for each residence, the editing process reduced the number to around a dozen per entry. (She has been posting some of the outtakes on her website.) But this complete experience of a book—its vision, execution, editing, and design—cannot be replicated on the screen. Now that Williamson has established her reputation as a multitalented cultural and design observer, we can look forward to future books featuring even more obscure houses, and perhaps some international ones, too.

KENNETH CALDWELL IS A SAN FRANCISCO-BASED WRITER AND COMMUNICATIONS CONSULTANT.

GRAND KAMIN

Terror and Wonder: Architecture in a Tumultuous Age
Blair Kamin
The University of Chicago Press, \$30.00

Blair Kamin has been a salient voice in the field of architecture and urban planning for several decades now. In addition to being *The Chicago Tribune's* leading authority on architecture, he is also a contributing editor to *Architectural Record* and was given the Pulitzer Prize for Criticism in 1999.

His latest book, *Terror and Wonder: Architecture in a Tumultuous Age*, is a highly informative and accessible survey of the architecture and planning of the past decade, a period indelibly marked not only by the tragedies of 9/11 and the devastation of Hurricane Katrina in New Orleans, but also more recent concerns about the importance of environmentally sensitive design practices, as well as renewed concern about our nation's infrastructure.

In light of these circumstances,

Kamin's recent book highlights the triumphs as well as the inevitable failures of architectural design in the decade following the turn of the millennium. As Kamin argues, the development of design is not a singular trajectory, but a more complex interplay of different political and cultural undercurrents.

Through 51 of his columns from *The Chicago Tribune* and other relevant publications, Kamin provides his readers with a retrospective look at the diverse developments affecting the nature of contemporary architectural discourse. The author begins with his response to the effect that the loss of the Twin Towers had on New York City's skyline, and ends with an editorial reflecting on President Obama's turn to developing our infrastructure by funding transportation systems instead of iconic structures denoting

the primacy of Western democracy. Kamin's collection of editorials convey the changing nature of aesthetics in response to extant socio-political forces.

By looking back at writing from the middle of 2001 until today, Kamin teases out the underlying logic imbued in the birth and destruction of iconic structures in the United States and abroad. Postscripts added to the majority of Kamin's editorials function as an adhesive that binds this logic together, allowing his writing to be charged with new meaning and relevance in light of the events that exceed the date of each article's original publication.

Though his writing may pivot around the more historically prominent events in the past decade, he also includes essays that convey the cultural relevancy of such structures as Renzo Piano's bold Modern Wing addition to the Art Institute of Chicago, and the iconic Rock-N'-Roll McDonald's in the Near North Side neighborhood of Chicago. He treats these structures as telling artifacts of the values of the culture that espoused them.

For instance, the author describes how after the McDonald's

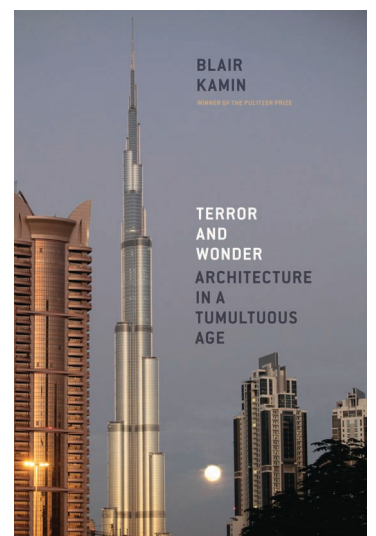
corporation rejected proposals to redesign its space-aged looking building in Chicago, the company rehabilitated its interior to include Ludwig Mies van der Rohe's Barcelona chairs and other modernist fixtures. These implicate the fast food restaurant with a highly postmodern form of pastiche: it meshes high art and low art to a degree that would send Clement Greenberg into a coma.

Kamin notes the marked impact that the success of Starbucks has had on restaurant franchise aesthetics. These occasional departures from analyzing the monumental inject Kamin's critique with a deeper, more everyday relevance than one may expect from the onset of his book.

Turning from the decades of excess predating 9/11, we can begin to look at a future of design that accounts for the shifting needs of society. Skeptical of the propensity for environmentalism to be commodified, Kamin nevertheless suggests that green architecture informs a marked change in our culture's attitude of visual decadence and fiscal responsibility in the aftermath of the economic downturn.

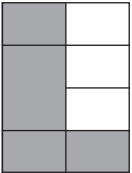
His critique is one that extends beyond the physical facades he analyzes into the broader context of socio-economic activity. Poignant and timely, his survey underscores the importance of thinking critically about design in a time when opulence becomes a liability and natural disasters demand the reorganization of our nation's fundamental priorities.

JEREMY STEPHEN SHEDD STUDIES VISUAL CULTURE AT THE SCHOOL OF THE ART INSTITUTE OF CHICAGO.



The Architect's Newspaper's Marketplace showcases products and services. Ads are available formatted 1/8 page or 1/4 page, as shown.

CONTACT:
Lynne Rowan
21 Murray St., 5th Floor New York NY 10007
TEL 212-966-0630 / FAX 212-966-0633 / lrowan@archpaper.com



THE WORLD'S SLIMMEST SIGHTLINES.



The 3/4" profile Vitrocsa sliding and pivoting system. Absolutely nothing else compares. Proven and tested since 1993, with over 25,000 Vitrocsa units installed in over 20 countries.

GOLDBRECHT USA INC.
1512 11TH STREET
SANTA MONICA, CA 90401
PHONE: 310 393 5540
WWW.GOLDBRECHT-SYSTEMS.COM

VITROCSA



Click ● 356



radii inc

architectural models - imaging - effects - done well
66 Willow Ave, Hoboken, NJ 07030 201.420.4700 (p) 201.420.4750 (f)
www.radiiinc.com

Click ● 225



RENDERING ANIMATION IMAGING

KIMWENDELLDESIGN.COM

180 VARICK STREET #820 NEW YORK NY 10014 T: 212.645.3690

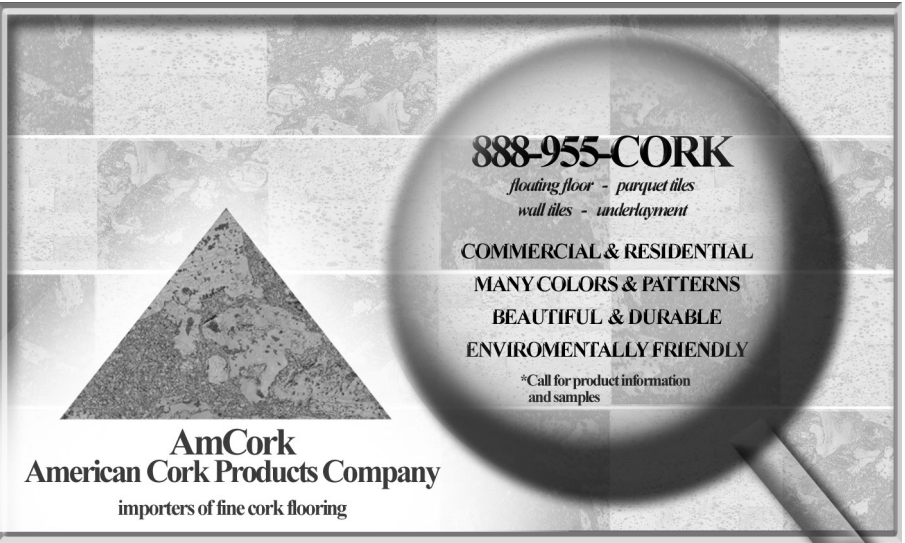
Click ● 186



Photograph © David Sundberg/Esto
Yankee Stadium, Populous, Architect

www.esto.com

Click ● 314



888-955-CORK

floating floor - parquet tiles
wall tiles - underlayment

COMMERCIAL & RESIDENTIAL
MANY COLORS & PATTERNS
BEAUTIFUL & DURABLE
ENVIROMENTALLY FRIENDLY

*Call for product information
and samples

AmCork
American Cork Products Company
importers of fine cork flooring

Click ● 106

THE ARCHITECT'S NEWSPAPER DECEMBER 15, 2010



To learn more about products and services advertised in **The Architect's Newspaper**, just note the advertiser's number and log on to www.archpaper.com. Click on our **Red Dot Product Finder**, and you can easily search by number to get free information about the latest products, design professionals, business services, and more.

COMPANY RS #	
American Cork Products	106
Boston Valley Terra Cotta	274
Esto	314
Fiandre Architectural Surfaces	372
Goldbrecht USA-Victrosa	356
Kim Wendell Design	186
Lampa	336
Radii, Inc.	225
The Fine Line	347
Viracon	263

THE

ARCHITECT'S NEWSPAPER

MIDWEST ARCHITECTURE AND DESIGN

WWW.ARCHPAPER.COM

REGISTERED ARCHITECTS IN THE MIDWEST AREA (IA, IL, MI, IN, OH, MN, WI, KS AND MO) FREE.

SEE WHAT MIDWEST ARCHITECTS ARE UP TO, SUBSCRIBE TO THE MIDWEST EDITION FOR \$29!

*Must provide RA number or firm letterhead **Must provide copy of valid student I.D.

Please check your subscription region:

☐ East (20x)

☐ West (12x)

☐ Midwest (11x)

Midwest/West Rates:

☐ Architectural Designers FREE!*

☐ 1 year \$29

☐ 2 years \$56

☐ Student \$19**

East Rates:

☐ Architectural Designers FREE!*

☐ 1 year \$39

☐ 2 years \$69.95

☐ Student \$25**

Mail this form with a check payable to: The Architect's Newspaper, LLC.
The Architect's Newspaper, 21 Murray St., 5th Floor New York, NY 10007
ref. 12.15.2010

Name

Date

Company

Address

City/State/Zip Code

Email

Phone

RA License Number

Credit Card Number

Exp. Date

SIGNATURE REQUIRED



INDUSTRY

☐ Academic

☐ Architecture

☐ Construction

☐ Design

☐ Engineering

☐ Government

☐ Interior Design

☐ Landscape Architect

☐ Planning/ Urban Design

☐ Real Estate/ Developer

☐ Media

☐ Other

JOB FUNCTION

☐ Academic

☐ Architect

☐ Designer

☐ Draftperson

☐ Firm Owner

☐ Government

☐ Intern

☐ Managing Partner

☐ Project Manager

☐ Technical Staff

☐ Student

☐ Other

FIRM INCOME

☐ Under \$500,000

☐ \$500,000 to 1 million

☐ \$1 to 5 million

☐ +\$5 million

EMPLOYEES

☐ 1-9

☐ 10-19

☐ 20-49

☐ 50-99

☐ 100-249

☐ 250-499



Major architecture for the mega-ministry, from left to right, by Johnson, Johnson, Neutra, and Meier.

SCOTT FRANCES/FESTO

MEGA-CHURCH MELTDOWN

Crystal Cathedral Ministries, the gleaming Southern California mega-church conglomerate, has filed for bankruptcy, citing pressures from creditors and deep shortfalls in donations to its *Hour of Power* television appeals.

Once a pioneer in media ministries, thanks to the gentle charisma and entrepreneurial fervor of its founder, Reverend Robert Schuller, the Crystal Cathedral defined destination architecture in its era, with glass-sheathed buildings that pushed upward from the flat landscape by Richard Neutra and Philip Johnson, and a later addition to the Garden Grove campus by Richard Meier.

Those improbable architect-client combinations were rare cases where modern and postmodern design could be compatible with Evangelical Christianity. Who knew? As debts mount, could those structures have been part of the problem, and could they now be sold and put to other use, or seized by angry creditors?

The ministry's future did not always look so grim. In 1955, the Iowa-born Schuller of the Reformed

Church of America found a religious dimension in suburbia's motor culture, before Orange County became a suburb. He turned a local drive-in movie theater into the country's first drive-in church on Sunday mornings when he preached from the roof of a concession stand, and his wife Arvella played the organ by his side. Transforming a place that the movie industry categorized as a teenage "passion pit" into a sacred place required an act of faith and \$10 rent every Sunday. The wager paid off.

Schuller also bet that commissioning Richard Neutra in 1958 to build a glass drive-in/walk-in church one mile away from Disneyland would give the ministry a unique profile. It did. Worshippers drove to the church with the high steeple and to the parking lots with terraced sight lines, and televised services began in 1970. Even with the church in bankruptcy, the *Hour of Power* still airs globally every Sunday.

Only *Face the Nation*, *Meet the Press*, and *60 Minutes* have been on the air longer. Schuller's program has had

a longer life than many buildings.

Neutra's airy design—with a reflecting pool, walls that slid open, and a cross atop the Tower of Hope that could be seen for miles—established an affinity with Schuller's message of love, light, and "possibility thinking" (his new, improved version of "positive thinking" from Norman Vincent Peale). The Jewish architect's notions of bio-realism and therapy through architecture seemed a world away from Schuller's Midwestern Calvinism that judged individuals by the "bottom line" of their achievements, yet the bond between the two was strong.

While graceful, the Neutra designs could only be called pioneering in Orange County. By 1964 Neutra's Tower of Hope and Disneyland's Matterhorn nearby were the two tallest points in the county. Neutra's memorial service in 1970 was held at Garden Grove.

As the ministry grew, another act of faith sought to differentiate the campus from the sea of concrete around it. Arvella Schuller

was inspired by Philip Johnson's Fort Worth Water Gardens (1974) and Johnson was hired to design a new glass church that would be larger than the Neutra structure, where TV had taken over much of the space in the same way that residential subdivisions and commercial sprawl displaced the old drive-in theaters. Client and architect found a kinship again.

Johnson, an atheist who called himself "an artist and a whore," became Schuller's architect, and in 1980 the preacher got a new \$21 million silvery glass house, the Crystal Cathedral, one of Orange County's major tourist attractions. Worshippers sat in Johnson's radiant space during the *Hour of Power*, or listened in parked cars, or watched it all as television panned from his stage set to fountains outside. The cathedral's corporate sheen was reminiscent of Johnson's Pennzoil building in Houston, and upscale enough to convince the congregants that they were the Episcopalians of Revivalism.

By 1990, Johnson

added The Bell Tower or Campanile, including melodramatic life-sized sculptures that reminded you that the man who loved modernism also shared cultural roots with the Liberace Museum.

Thanks to Armand Hammer (providing introductions to Mikhail Gorbachev) and Rupert Murdoch (satellite access to the former Soviet Union), Schuller's global reach widened. The architecture made for better television, according to Erica Robles, author of a forthcoming book on the Crystal Cathedral, architecture, and the media.

In 2003, the Crystal Cathedral campus expanded even further, and at greater cost, with a \$40 million International Center for Possibility Thinking, a generic visitors center in embossed curved steel and glass designed by Richard Meier.

The dream-team campus' financial collapse defies familiar tales of greedy right-wing evangelists enriching themselves and spending lavishly on homes and luxuries. The *Hour of Power* had no

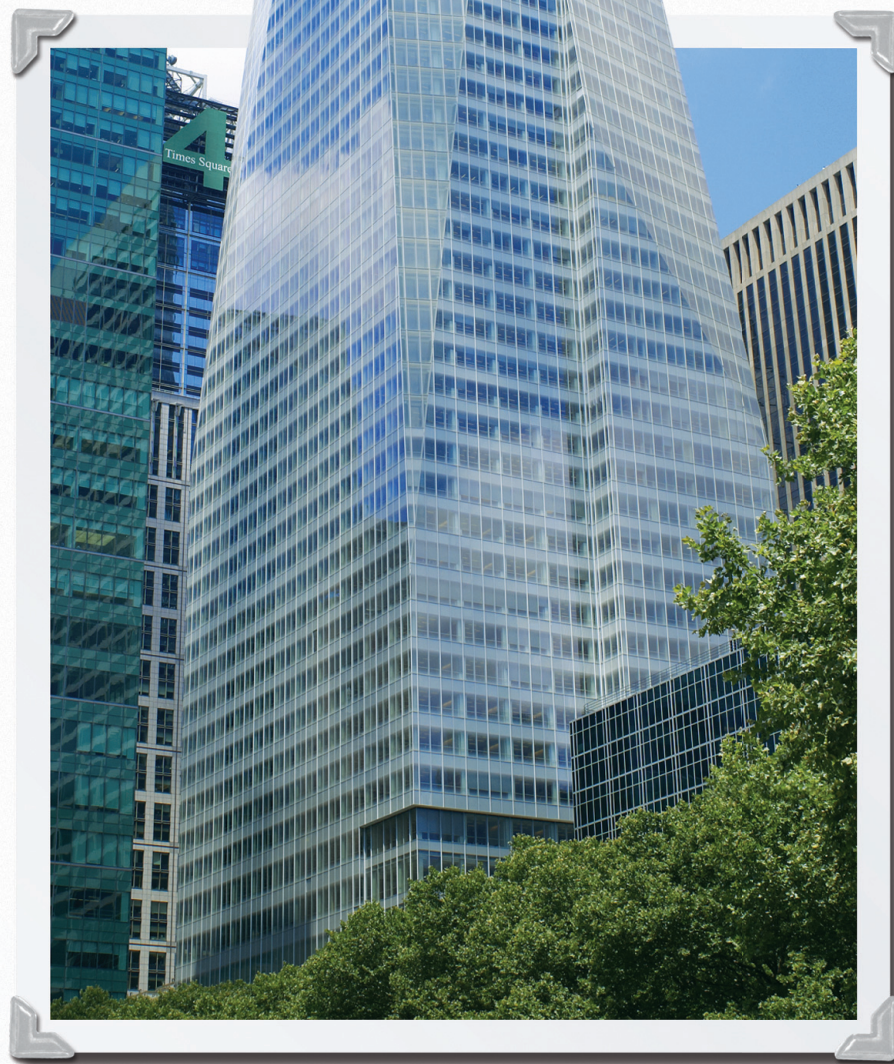
strong right-wing political agenda. Crystal Cathedral leaders were paid reasonable salaries and most of the construction, albeit by celebrity architects, was funded by contributions. In the past two years, as Robert Schuller's children miscalculated on internet expansion and funded a lavish, money-losing production called *Creation*, those contributions fell 24 percent. (Most creditors are media firms or vendors, not builders.)

There's no clear prophetic element to the Schuller fall from grace besides the inherent risk in passing the reins of an empire to one's children. Charisma isn't transferable, nor is it always genetic, as the Schullers have learned to their chagrin. Another lesson is that the risk to any mega-church depends on how leveraged it is, and on its dependency on the personal appeal of a single pastor.

So far, none of Schuller's wealthy patrons has risen to ease the debt, although one might have found the money if Schuller's message echoed Tea Party rhetoric. A revenue trickle comes from opening its parking lots to the public, yet a worsening crisis could force the Crystal Cathedral back to its roots. "A lot of those drive-ins didn't make money showing feature films," said Erica Robles. Possibilities range from flea markets to biker shows, to mergers with Christians who have capital. If I were choosing, the Meier building would be the first on the block. Jim Coleman, the Crystal Cathedral's creative director and Robert Schuller's son-in-law, swears that there are no plans to sell any of the campus architecture. "We are faithful people. Remember, the Israelites had their backs against the Red Sea when Moses took them there," he said.

Where on the dark side might the Schuller empire end up if things don't work out the way they did for Moses? What if they scheduled an apocalypse, and no cars drove in? Surely, icons for sale wouldn't be a sin. God knows.

ART AND ARCHITECTURE CRITIC DAVID D'ARCY IS A FREQUENT CONTRIBUTOR TO AN ON ARCHITECTURE, TO THE ART NEWSPAPER ON ART, AND TO SCREEN INTERNATIONAL ON FILM.



IT STARTED OUT GREEN, BUT ENDED UP PLATINUM.

The Bank of America building in Midtown, Manhattan is the first skyscraper designed to achieve a LEED® Platinum rating and is billed as the greenest skyscraper in the country. One reason is the building's floor-to-ceiling glass curtain wall made from Viracon's high-performance, low-e coating on low iron glass with a custom silk-screen. Viracon worked with the architects and contractors to provide glazing options that met strict LEED Platinum guidelines. But that's nothing new at Viracon. For over 40 years, our customers have trusted us to provide proven sustainable architectural glass expertise without compromising aesthetics or energy efficiencies. To get our thinking on your thinking call 800.533.2080, e-mail glass@viracon.com or visit viracon.com.

©2010 Viracon. All rights reserved.

More possibilities from the leader in glass fabrication

